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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,279	01/20/2004	Shinichi Ishizuka	Q79062	6849
23373	7590	12/28/2007	EXAMINER	
SUGHRUE MION, PLLC			PIZIALI, JEFFREY J	
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SUITE 800			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20037			2629	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/759,279	ISHIZUKA, SHINICHI	
	Examiner	Art Unit	
	Jeff Piziali	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/377,405.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 26 October 2007 has been entered.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/377,405, filed on 20 August 1999.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Norman et al* (US 5,719,589 A) in view of *Sumi et al* (US 6,169,532 B1).

Regarding claim 1, Norman discloses a driving method of a light-emitting display [Fig. 1; 10] in which light-emitting elements are connected to intersections of positive electrode lines [Fig. 3; 14] and negative electrode lines [Fig. 3; 13] arranged in a matrix, either one of said positive electrode lines or said negative electrode lines are employed as scan lines [Fig. 3; 13] with the other employed as drive lines [Fig. 3; 14], said driving method comprising; while scanning [Fig. 3; 42] the scan lines, connecting [Fig. 3; 36] drive sources [Fig. 3; 37] to desired drive lines in synchronization with the scanning, whereby allowing the light-emitting elements connected to the intersections of the scan lines and drive lines to emit light; and during a reset period after a scan period for scanning each scan line is complete and before scanning the following scan line is started, applying a first reset voltage [Fig. 3; V_R] (see Column 7, Lines 26-28) to all of said scan lines and applying a second reset voltage [Fig. 3; V_C] that is greater than said first reset voltage to all of said drive lines (see Column 5, Line 46 - Column 8, Line 53).

Norman does not expressly disclose scanning the following scan line immediately after the reset period in which the first reset voltage is applied to all of said scan lines and the second reset voltage is applied to all of said drive lines.

However, Sumi does disclose during a reset period [i.e., between image display frames] after a scan period for scanning an arbitrary scan line [Fig. 10; 17 -- the bottom line in the first frame, for instance] is complete and before scanning the following scan line [Fig. 10; 17 -- the top line in the second frame, for instance] is started, applying a first reset voltage [Fig. 10; $V_g = 0$] to all of said scan lines and applying a second reset voltage [Fig. 10; via 35] to all of said drive lines; and scanning the following scan line immediately after the reset period in which the first

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reset voltage is applied to all of said scan lines and the second reset voltage is applied to all of said drive lines (see Column 13, Line 63 - Column 14, Line 39).

Norman and Sumi are analogous art, because they are from the shared inventive field of driving organic electroluminescent and LED display devices. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use Sumi's resetting period technique with Norman's light-emitting display device, so as to eliminate residual potentials on the display electrodes.

Regarding claim 2, Norman discloses the difference between said second reset voltage and said first reset voltage is set to be lower than the light emission threshold voltage of said light-emitting element (see Column 7, Lines 3-18).

Regarding claim 3, Norman discloses said drive lines are connectable to either said drive source or a second reset voltage source [Fig. 3; V_C] for providing said second reset voltage, said scan lines are connectable to either a first reset voltage source [Fig. 3; V_R] for providing said first reset voltage or a reverse bias voltage source [Fig. 3; 45, 48] for providing a predetermined reverse bias potential (see Column 7, Line 3 - Column 8, Line 53).

Regarding claim 4, this claim is rejected by the reasoning applied in rejecting claim 3.

Regarding claim 5, Norman discloses said first reset voltage source provides a ground potential (see Column 7, Lines 3-34 and Column 8, Lines 1-36).

Regarding claim 6, this claim is rejected by the reasoning applied in rejecting claim 5.

Regarding claim 7, Norman discloses said reverse bias voltage sources are to have a same voltage as the voltage value determined by subtracting said second reset voltage from light emission specifying voltages of light-emitting elements (see Column 8, Lines 1-36).

Regarding claim 8, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 9, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 10, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 11, Norman discloses said drive lines are connectable to either one of said drive sources, the second reset voltage source for providing said second reset voltage, or a grounding means for providing a ground potential, said scan lines are connectable to either the first reset voltage source for providing said first reset potential or the reverse bias voltage source for providing a predetermined reverse bias potential (see Column 7, Line 3 - Column 8, Line 53).

Regarding claim 12, this claim is rejected by the reasoning applied in rejecting claim 11.

Regarding claim 13, this claim is rejected by the reasoning applied in rejecting claim 5.

Regarding claim 14, this claim is rejected by the reasoning applied in rejecting claim 5.

Regarding claim 15, Norman discloses said reverse bias voltage source has a same voltage as the light emission specifying voltage of light-emitting elements (see Column 7, Lines 3-18).

Regarding claim 16, this claim is rejected by the reasoning applied in rejecting claim 15.

Regarding claim 17, this claim is rejected by the reasoning applied in rejecting claim 15.

Regarding claim 18, this claim is rejected by the reasoning applied in rejecting claim 15.

Response to Arguments

5. Applicant's arguments filed 26 October 2007 have been fully considered but they are not persuasive.

The Applicant contends, "*Norman fails to teach 'a reset period after a scan period'*" (see Page 9, Paragraph 1 of the 'Amendment Under 37 C.F.R. 1.114(c)' filed 26 October 2007). However, the examiner respectfully disagrees.

Norman explains, "*shift register [Fig. 1; 25] cycles through each of the thirty two rows [Fig. 3; 13], one at a time, by moving switch [Fig. 3; 40] of a selected row into contact with*

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power source [Fig. 3; 45] (first input [Fig. 3; 42]) while maintaining switch [Fig. 3; 40] of each of the remaining thirty one rows in contact with second input [Fig. 3; 43] and the row rest potential [Fig. 3; V_R]" (see Column 7, Lines 37-42).

Norman's row-by-row driving cycle technique results in a plurality of sequential reset and scan periods during display operation. In one example, the scanning of Row #1 (i.e., "a scan period") is followed by the scanning of Row #2 (i.e., "a reset period" -- wherein Row #1 is unselected and connected to row rest potential V_R). Contrary to the Applicants contention, Norman does indeed teach "a reset period after a scan period."

The Applicant contends, "*even assuming arguendo that Norman taught a reset period after a scan period, Norman still fails to teach 'applying a first reset voltage to all of said scan lines' or 'applying a second reset voltage ... to all of said drive lines'" (see Page 9, Paragraph 2 of the 'Amendment Under 37 C.F.R. 1.114(c)' filed 26 October 2007). However, the examiner respectfully disagrees.*

Norman explains, "*In each of the thirty two rows, from zero to sixty four LEDs will be turned ON to generate a desired image on array 10. Column terminals 14 connected to LEDs which are not turned ON remain connected to column rest potential V_C " (see Column 7, Lines 49-52).*

In the case where, across each of the thirty-two rows, zero LEDs are turned ON, Norman does indeed teach, "applying a second reset voltage [i.e., V_C]... to all of said drive lines." Furthermore, after consecutive selection-cycling through only two of Norman's thirty-two rows, all of the scan lines will have been applied with a first reset voltage [i.e., V_R].

The Applicant contends, *"even assuming arguendo that Norman taught a reset period after a scan period and that Norman taught applying V_C to all of the column terminals and applying V_R to all of the row terminals, Norman still fails to teach 'applying a second reset voltage that is greater than said first reset voltage to all of said drive lines'"* (see Page 9, Paragraph 3 of the 'Amendment Under 37 C.F.R. 1.114(c)' filed 26 October 2007). However, the examiner respectfully disagrees.

Norman explicitly discloses periodically applying a first reset voltage [Fig. 3; V_R -- i.e. "row reset potential"] to scan lines/rows [Fig. 3; 13], and applying a second reset voltage [Fig. 3; V_C -- i.e. "column reset potential"] to drive lines/column [Fig. 3; 14] (see Column 6, Line 34 - Column 7, Line 18).

Norman explains the aforementioned row rest potential [Fig. 3; V_R] may be an open terminal/circuit (see Column 6, Lines 58-61). Therefore, any non-zero voltage could be used as Norman's column rest potential [Fig. 3; V_C] and read on the instantly claimed subject matter, and wherein -33 volts is given as one non-limiting example by Norman (see Column 8, Line 15).

Furthermore, although Norman prefers using rest potentials to place unselected light emitting diodes [Fig. 3; 15] in a "reverse bias condition" (see Column 7, Line 30), Norman makes it plain the invention's only limiting factor is "the column rest potential being below a level where individual light emitting diodes of the plurality of light emitting diodes will turn ON" (see Column 10, Lines 1-4).

Therefore, taking the row rest potential again to be an open terminal/circuit, Norman's apparatus provides full functionality in an alternate embodiment (compared to the

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aforementioned $V_C = -33$ volts example) wherein the column rest potential is any positive voltage that doesn't turn on the light emitting diodes.

The applicant also contends Norman fails to describe a reset period after completion of a scan period and before the start of the scanning of a following line (see Page 8, Paragraph 3 of the 'Amendment Under 37 C.F.R. 1.114(c)' filed 26 October 2007). However, the examiner respectfully disagrees.

In one example, after scanning the first row [Fig. 3; Row #1], should the video data input signal [Fig. 1; 30] ever be lost or disconnected [an unfortunately inherent fact of life for all practical purposes of transmitting video/image data], there would be of course no selected rows [Fig. 3; 13] or columns [Fig. 3; 14], and all the LEDs [Fig. 3; 15] would necessarily be set to a reset state, as instantly claimed.

In another related example, Norman clearly discloses scanning the first row [Fig. 3; Row #1], and then during a "reset period" [for instance, while scanning the second row -- i.e. Row #2] after a scan period for scanning an each scan line [e.g., after an earlier complete 32-row "frame" cycle period] is complete and before scanning the following scan line [Fig. 3; Row #3] is started, applying a first reset voltage [Fig. 3; V_R] to all of said scan lines [Fig. 3; Row #1 and Row #3] (see Column 7, Lines 35-52).

The Applicant contends, "*Sumi fails to teach 'a reset period after a scan period for scanning each scan line'*" (see Page 10, Paragraph 4 of the 'Amendment Under 37 C.F.R. 1.114(c)' filed 26 October 2007). However, the examiner respectfully disagrees.

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Sumi discloses during a reset period [i.e., between image display frames] after a scan period for scanning an each scan line [Fig. 10; 17 -- the bottom line in the first frame, for instance] is complete and before scanning the following scan line [Fig. 10; 17 -- the top line in the second frame, for instance] is started, applying a first reset voltage [Fig. 10; $V_g = 0$] to all of said scan lines and applying a second reset voltage [Fig. 10; via 35] to all of said drive lines; and scanning the following scan line immediately after the reset period in which the first reset voltage is applied to all of said scan lines and the second reset voltage is applied to all of said drive lines (see Column 13, Line 63 - Column 14, Line 39).

Wherein, by the time Sumi's bottom scan line is scanned, each the above-positioned scan lines will have already been scanned earlier during the first frame driving period, for example.

The Applicant contends, "*The purpose of the refresh period of Sumi, which happens after only a bottom scan line, is to reduce the electric consumption by the drain driver performing the re-writing operation when the EL display apparatus displays the still image (col. 13, lines 63-66). This is related to the operation of the active drive type apparatus and would not apply to the apparatus of Norman*" (see Page 10, Bottom Paragraph of the 'Amendment Under 37 C.F.R. 1.114(c)' filed 26 October 2007). However, the examiner respectfully disagrees.

In response to Applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge

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generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, it would have been obvious to one having ordinary skill in the art at the time of invention to use Sumi's resetting period technique with Norman's light-emitting display device, so as to eliminate residual potentials on the display electrodes (e.g., see Sumi: Column 16, Lines 35-45).

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali
21 December 2007